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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,273	03/23/2004	Horst Flechtner	080437.52816US	1868
23911	7590	09/15/2006	EXAMINER	
CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300			TO, TUAN C	
			ART UNIT	PAPER NUMBER
			3663	

DATE MAILED: 09/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/806,273

Applicant(s)

FLECHTNER ET AL.

Examiner

Tuan C. To

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,4,6-16,18-20 and 22-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-16,18-20 and 22-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

The disclosure is objected to because of the following informalities: The paragraph numbers on page 13-19 of the proposed specification dated on 09/26/2005 is not in order.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 3, 4, 6-16, 18-20 and 22-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As described in the specification, specially on page 6, paragraph 0014, the total vehicle mass is determined from resistance forces resulting from rotational forces, air resistance, rolling resistance and the slope descending force. There is no disclosure to include vehicle acceleration is determined from resistance forces resulting from rotational forces, air resistance, rolling resistance and the slope descending force.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3, 4, 6, 8, 12, 14, 16, 18, 19, 22, 24, 28, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leimbach et al. (US 6314383B1), and in view of Lalor et al. (US 6332354B1), and Bellinger et al. (US 20030040861A1).

With respect to claims 1, 8, and 24, Leimbach et al. disclose a system and method for determining a vehicle mass while taking different driving situations into

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consideration. It is true because in Leimbach et al. the mass value of the vehicle is determined either when the vehicle is traveling on a roadway slope or when the vehicle is traveling on a street level (Leimbach et al., column 4, lines 16-34). The evaluation of a vehicle acceleration is also discussed in the patent (column 3, lines 31-51). Thus, the teachings of Leimbach et al. read on the limitation: "a method for determining the mass of a motor vehicle while taking different driving situations into consideration, involving an evaluation of a vehicle acceleration". In addition, in column 3, lines 31-51, Leimbach et al. further describe the determination of mass  $M_{ges}$  for a vehicle acceleration  $a_{Fhzg}$  as the following:

$$M_{ges} * a_{Fhzg} = F_{antr} - F_{Roll} - F_{Luft} - F_{Hang} - F_{Rot}, \text{ which reads on the limitation:}$$

"wherein a part from a driving force of a vehicle drive unit, resistance forces resulting from rotational forces, air resistance, rolling resistance and the slope descending force are taken into consideration".

Although Leimbach et al. teach a braking system to receive the command signal from the brake system controller (102) (see figure 1), Leimbach do not disclose: "a braking force is also taken into consideration", "individual mass evaluation results from each of the plurality of driving situations are stored, and the stored individual mass evaluation results are combined into a collective mass value".

Lalor et al. is directed to a system and method for determining the effectiveness of a braking system and for measuring changes in the mass of a motor vehicle. In Lalor et al., the braking force is considered as it is  $F = M * D$ , wherein  $M$  is the actual vehicle mass,  $D$  is deceleration rate (Lalor et al, column 9, lines 1-15).

Bellinger et al. teaches another system/method for estimating vehicle mass including: "individual mass evaluation results from each of the plurality of driving situations are stored, and the stored individual mass evaluation results are combined into a collective mass value" (Bellinger et al., abstract; figures 2A and 2B, steps 124, 126, and 128).

Hence it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Leimbach et al. to include the teachings of braking force as represented in Lalor et al.'s in order to provide vehicle safety while vehicle is traveling on a typical roadway that has a specific coefficient friction.

With regard to claims 3 and 18, Leimbach et al. disclose the limitation: "when determining the collective mass value, different driving situations are weighted differently (Leimbach et al., figure 3; column 4, lines 27-34).

With regard to claims 4, 6, 19, and 22, Leimbach et al. disclose the limitation: "for taking the slope descending force into consideration, a roadway inclination is determined by determining, by means of at least one longitudinal acceleration sensor installed in the vehicle, an acceleration occurring in the horizontal direction and by relating it to the acceleration occurring in the roadway direction (Leimbach et al, column 3, lines 45-51; column 4, lines 27-34).

With regard to claims 12 and 28, Lalor et al. teach that the braking force is determined from the actual vehicle mass and the deceleration rate. Therefore, Lalor et

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al. is inherently disclose that the braking force is distributed on the vehicle wheels on a specific path is not the same.

With respect to claim 16, Leimbach et al. disclose a system and method for determining a vehicle mass while taking different driving situations into consideration. It is true because the mass value of the vehicle, as discussed herein, is determined either when the vehicle is traveling on a roadway slope or when the vehicle is traveling on a street level (Leimbach et al., column 4, lines 16-34). The evaluation of a vehicle acceleration is also discussed in the patent (column 3, lines 31-51). Thus, the teachings of Leimbach et al. read on the limitation: "a method for determining the mass of a motor vehicle while taking different driving situations into consideration, involving an evaluation of a vehicle acceleration". Furthermore, in column 3, lines 31-51, Leimbach et al. further teach that the determination of mass  $M_{ges}$  for a vehicle acceleration  $a_{Fhzg}$  as the following:

$$M_{ges} * a_{Fhzg} = F_{antr} - F_{Roll} - F_{Luft} - F_{Hang} - F_{Rot}, \text{ which reads on the limitation:}$$

"wherein a part from a driving force of a vehicle drive unit, resistance forces resulting from rotational forces, air resistance, rolling resistance and the slope descending force are taken into consideration".

Although Leimbach et al. teach a braking system to receive the command signal from the brake system controller (102) (see figure 1), Leimbach do not disclose: "a braking force is also taken into consideration".

Lalor et al. is directed to a system and method for determining the effectiveness of a braking system and for measuring changes in the mass of a motor vehicle. In Lalor

et al., the braking force is considered as it is  $F = M * D$ , wherein M is the actual vehicle mass, D is deceleration rate (Lalor et al, column 9, lines 1-15).

Hence it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Leimbach et al. to include the teachings of braking force as represented in Lalor et al.'s in order to provide vehicle safety while vehicle is traveling on a typical roadway that has a specific coefficient friction.

With regard to claims 14 and 30, Leimbach et al. teach that the detectable offsets in vehicle acceleration and driving force are corrected via the comparison of those to a predetermined threshold (Leimbach et al., column 4, lines 52-60).

With regard to claims 15 and 31, Leimbach et al. teach "plausibility controls are provided" (see Leimbach et al., column 3, lines 53-59).

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leimbach et al. (US 6314383B1), Lalor et al. (US 6332354B1), Bellinger et al. (US 20030040861A1), and further in view of Zhu et al. (US 6438510B2).

Neither Leimbach et al., Lalor et al., nor Bellinger et al. are addressing the limitation "the component of the acceleration in the roadway direction normal to a gravity direction is determined from a satellite-based navigation system". The U.S. reference to Zhu et al. has been cited to overcome the missing feature from Leimbach et al. and Lalor et al. by teaching a system/method estimating vehicle mass, wherein the component of the acceleration, which is the vehicle speed, is determined from a satellite-based navigation system (see Zhu et al., column 4, lines 49-51).



It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Leimbach et al., Lalor et al, and Bellinger et al. to include the teachings as taught by Zhu et al. so that vehicle mass is accurately determined as important as the vehicle safety system and are in account.

Claims 7 and 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leimbach et al. (US 6314383B1), Lalor et al. (US 6332354B1), Bellinger et al., and further in view of Weiberle et al. (US 6374171B2).

Leimbach et al., Lalor et al., and Bellinger et al. fail to teach the limitation: " a vehicle body pitch angle is taken into consideration".

The U. S Patent No. '171B2 to Weiberle et al. has been provided as teaching "vehicle body pitch angle is taken into consideration" as claimed (see figure 2; column 3, lines 17-30).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Leimbach et al., Lalor et al., and Weiberle et al. so that the vehicle braking force is properly adjusted to keep the vehicle in a stable condition, specifically when the vehicle is moving uphill or down hill.

Claims 9 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leimbach et al. (US 6314383B1), Lalor et al. (US 6332354B1), Bellinger et al. and further in view of Deml et al. (US 6059379A).

The combination of Leimbach et al., Lalor et al., and Bellinger et al. fail to disclose the following: "the braking fore is determined from a braking pressure and an estimated coefficient of friction between a brake lining and a brake disc."

The U.S Patent No. '379A to Deml et al. has been cited as disclosing the limitation as stated above (Deml et al., column 3, lines 9-24).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the teachings of braking force, as clearly explained in Deml et al. patent, to the teachings of braking force disclosed in Leimbach et al., Lalor et al., and Bellinger et al. so that the braking force applied to each wheel is automatically adjust to keep the vehicle in a stable condition.

Claims 10 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leimbach et al. (US 6314383B1), Lalor et al. (US 6332354B1), Bellinger et al., and further in view of Yasui et al. (US 20020008423A1).

Leimbach et al., Lalor et al., and Bellinger et al. fail to include the following: "only braking operations without notable slippage between tires and roadway are taken into consideration".

Yasui et al. has been cited as teaching a vehicle system, in which the braking operation is taken into consideration. The slippage is prevented while the braking force is distributed to each wheel of a vehicle (Yasui et al., paragraph 0034).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Leimbach et al., Lalor et al., Bellinger et al., and Yasui et al. so that the vehicle is maintained in a stable condition whether it travel on a slippage surface or not.

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Claims 11 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leimbach et al. (US 6314383B1), Lalor et al. (US 6332354B1), Bellinger et al. , Deml et al. (US 6059379A), and further in view of Yasui et al. (US 20020008423A1).

Leimbach et al., Lalor et al., Bellinger et al., and Deml et al. fail to include the following: "only braking operations without notable slippage between tires and roadway are taken into consideration".

Yasui et al. has been cited as teaching a vehicle system, in which the braking operation is taken into consideration. The slippage is prevented while the braking force is distributed to each wheel of a vehicle (Yasui et al., paragraph 0034).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Leimbach et al., Lalor et al., Bellinger et al., Deml and Yasui et al. so that the vehicle is maintained in a stable condition whether it travels on a slippage surface or not.

Claims 13 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leimbach et al. (US 6314383B1), Lalor et al. (US 6332354B1), Bellinger et al., and further in view of Heintz et al. (US 5485381A).

Leimbach et al., Lalor et al., and Bellinger et al. fail to teach the following: "at least one of the roadway inclination and the path traveled during a braking operation is determined from a vehicle navigational system".

Heintz et al. has been cited to overcome the missing feature from said combination (Heintz et al., column 2, lines 30-54).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Leimbach et al., Lalor et al., Bellinger et al, and Heintz et al. so that the vehicle speed limit or braking operation is controlled appropriately in according to the road surface of a specific road that has been stored in the geographic database of the vehicle navigation system.

### ***Response to Arguments***

Applicant's arguments, see applicant's response, filed 05/16/2006, with respect to the rejection(s) of claim(s) 1, 3, 4, 6-16, 18-20 and 22-31 under 35 U.S.C 103(a) rejection have been fully considered and are persuasive. Therefore, the rejection has been withdrawn since the cited references does not fairly suggest "individual mass evaluation results from each of the plurality of driving situations are stored, and the stored individual mass evaluation results are combined into a collective mass value". However, upon further consideration, a new ground(s) of rejection is made in view of Bellinger et al. (US 20030040861A1).

### ***Conclusions***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan C To whose telephone number is (571) 272-6985. The examiner can normally be reached on from 8:00AM to 5:00PM.

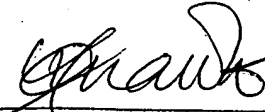
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner,

A handwritten signature in black ink, appearing to read 'Tuan C To', is written over a horizontal line.

Tuan C To

September 12, 2006